

STRONGER by DEGREES

A STRATEGIC AGENDA

for Kentucky Postsecondary
and Adult Education



Focus on Research, Economic, & Community Development

Presentation to the Council on Postsecondary Education

September 12, 2013



Stronger by Degrees

2011-15 Strategic Agenda for

Kentucky Postsecondary and Adult Education

- **Vision:** All Kentuckians will be prepared to succeed in a global economy.
- **Mission:** To deliver a world-class education to students, create and apply new knowledge, and grow the economy of the Commonwealth.
- **Four focus areas:**
 - College readiness
 - Student success
 - Research, economic and community development
 - Efficiency and innovation





In order to compete in a global economy, Kentucky's postsecondary education must focus on:



Talent Creation

Creating a citizenry that not only has content knowledge in fields of study and responsive to the needs of employers, but also is comprised of critical thinkers, problem-solvers and innovators.



Knowledge creation

Fostering networks devoted to developing innovative and creative solutions to society's problems.



Knowledge transfer

Moving intellectual research into the marketplace.



Partnerships

Mobilizing business, industry, university and government resources and investments.



UK – Tekcrete Fast



U of L – Rehabilitation Research Center



- Regaining use of limbs
- Epidural stimulation of the spinal cord is a promising research therapy with the goal of helping people regain their ability to walk



Research, Economic, and Community Development



Policy Objective #6: Increase basic, applied, and translational research to create new knowledge and economic growth.

Strategies:

6.1 - Support the critical role that the **University of Kentucky** and the **University of Louisville** play in the **creation of new knowledge** and recognize universities and faculty members for the advancement of knowledge and enlightenment.

6.2 - Support **collaborative research efforts** that leverage university expertise, lead to research investments and **commercialization** in high-growth or emerging areas, and are **aligned with business and industry growth**.

6.3 - Develop and implement a **strategic communications plan** that **highlights campus-based research and development initiatives** and the impact of this work on Kentucky's economic and community competitiveness.

6.4 - Secure additional funding for **research matching programs** and **explore new funding approaches** to maximize research, Kentucky Innovation Act investments, and multi-campus collaborations.

6.5 - Advance **Kentucky's STEM+H agenda** through ongoing **leadership, advocacy**, and **collaborative efforts**.

6.6 - Foster an **innovative, creative**, and **entrepreneurial culture** within the postsecondary education community.





Policy Objective 6: Increase basic, applied, and translational research to create new knowledge and economic growth.

Performance Metrics



Degrees and credentials in STEM+H Fields

(science, technology, engineering,
math, and health)

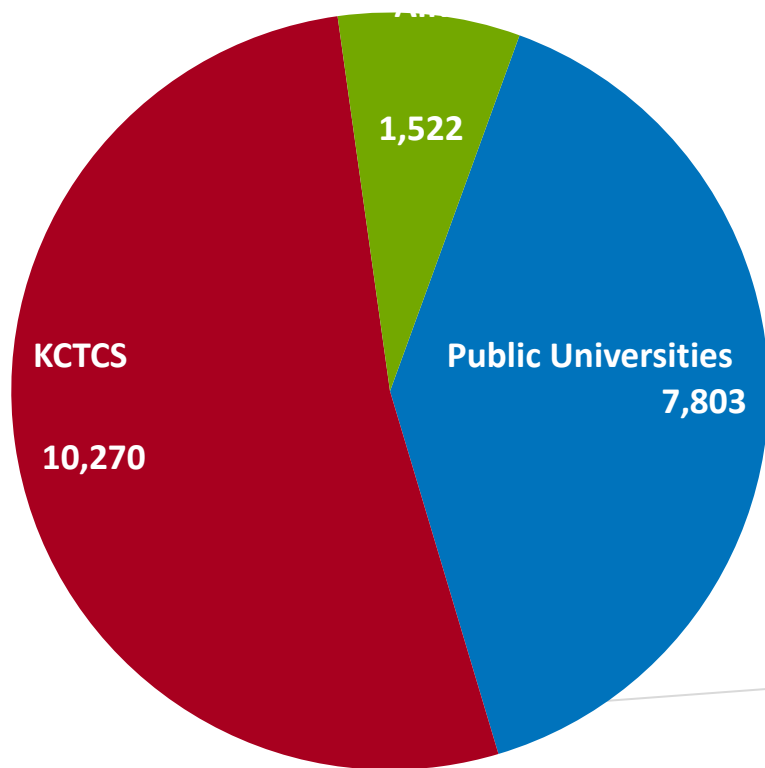


Research & Development Funding

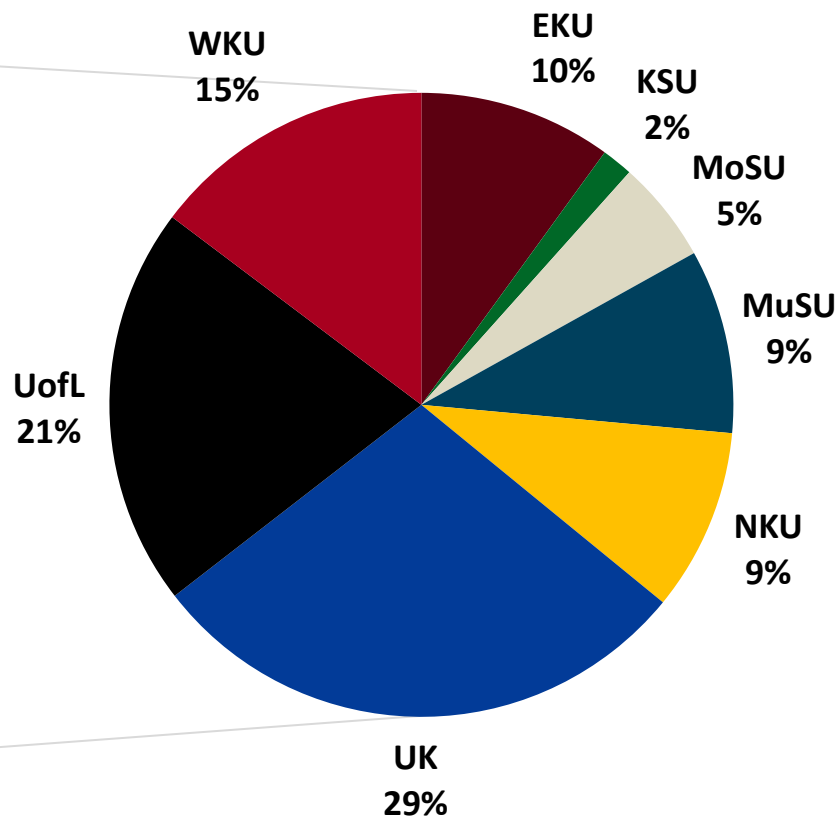
STEM+H Degrees Conferred by Sector and University

System Totals
(2009-2012)

All Institutions



Subset: Public Universities



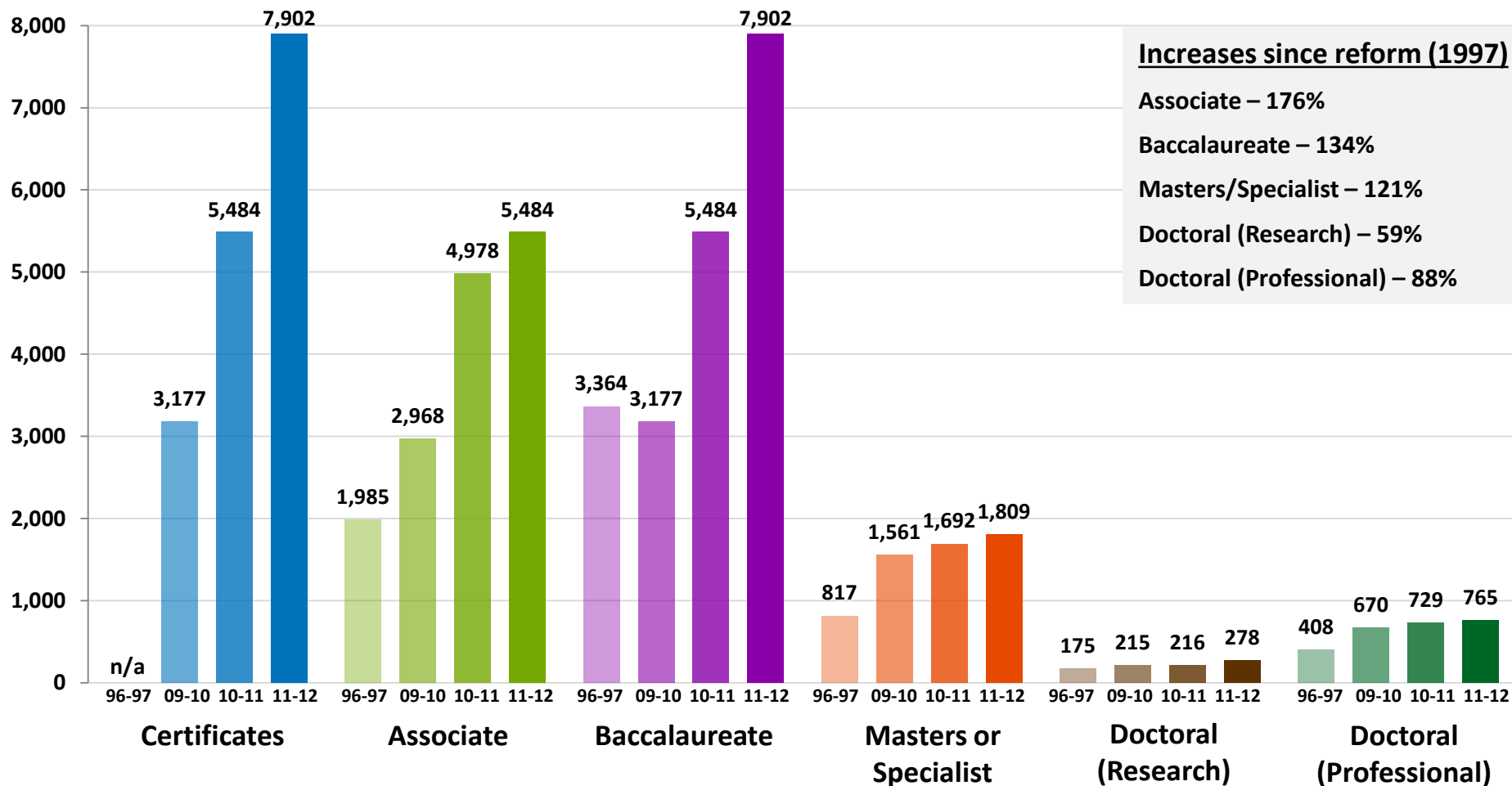
Source: CPE KPEDS.



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STEM+H Degrees Are Rising

System Totals
(1996-97, 2009-2012)



Source: CPE KPEDS. Note: CIP codes used to identify the STEM fields changed twice during period of interest.



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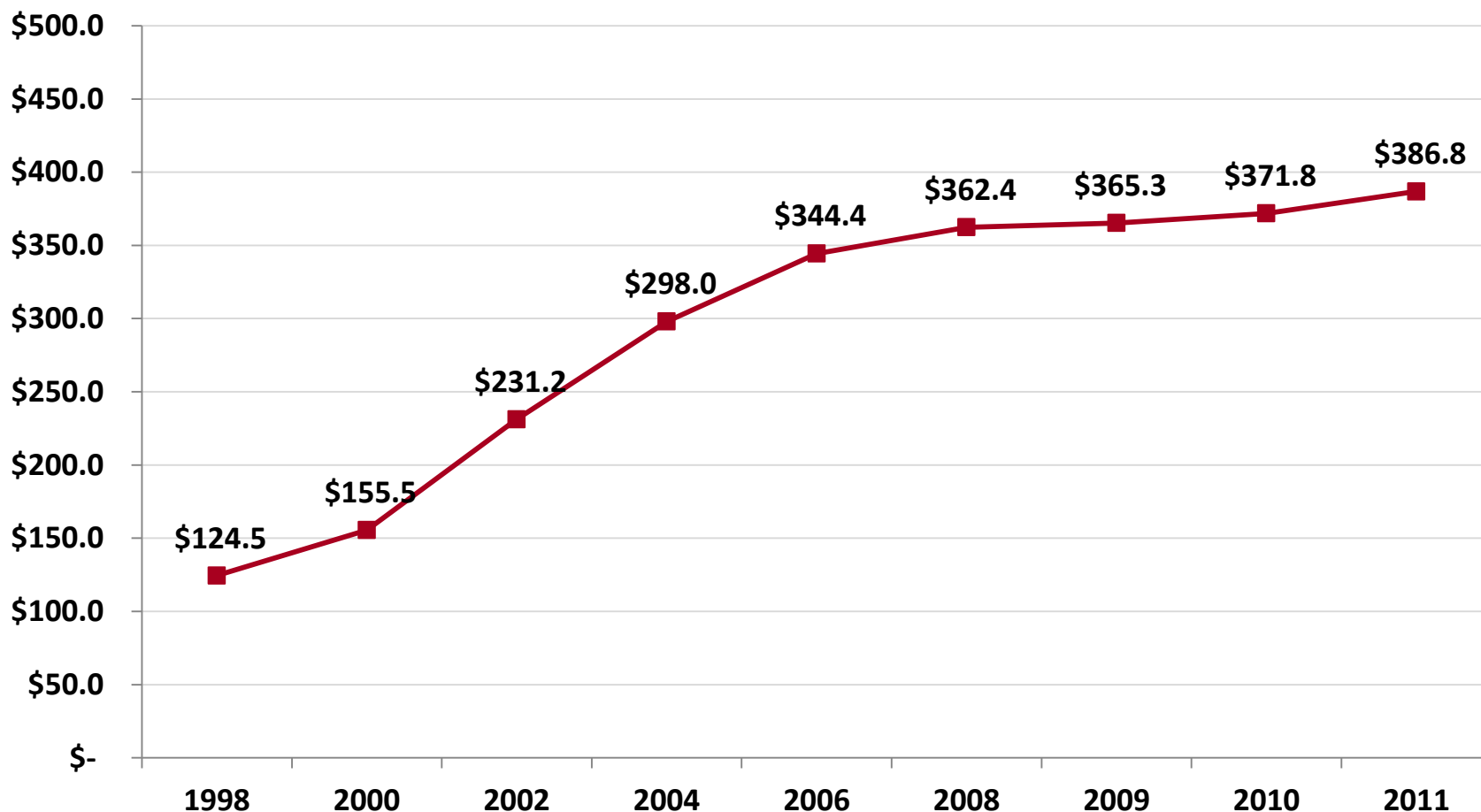


- Today, the primary source of new knowledge is at our research universities
- 35% of the federal R&D budget goes to 25 schools
- 24 universities share 42% of overall US *research output*
- Some of our biggest foreign customers – China and India - are increasingly investing in their own competitiveness
 - *Especially in their research universities*



Externally-funded Research and Development (1998-2011)

(in millions of dollars)



Source: CPE KPEDS.

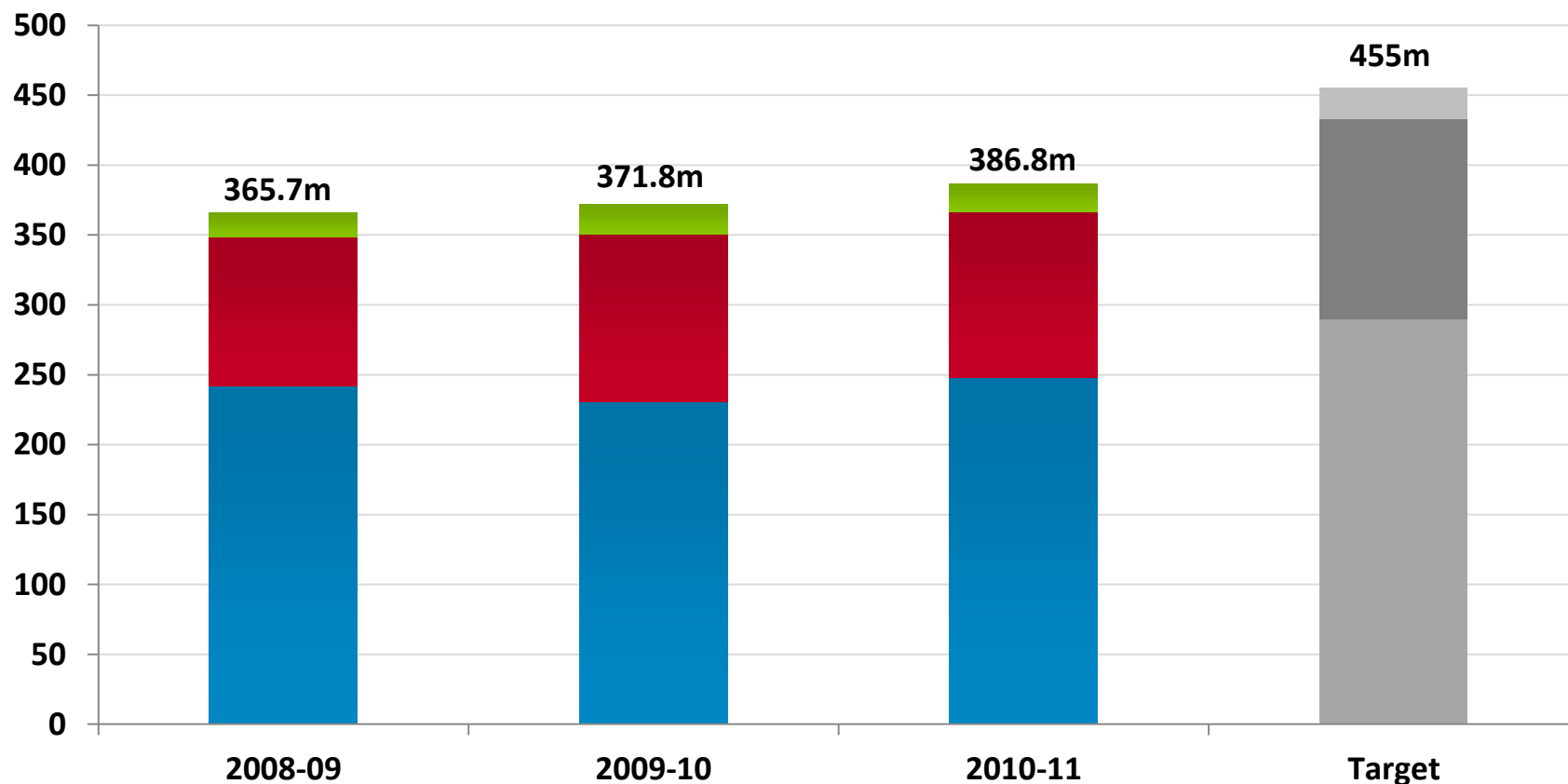


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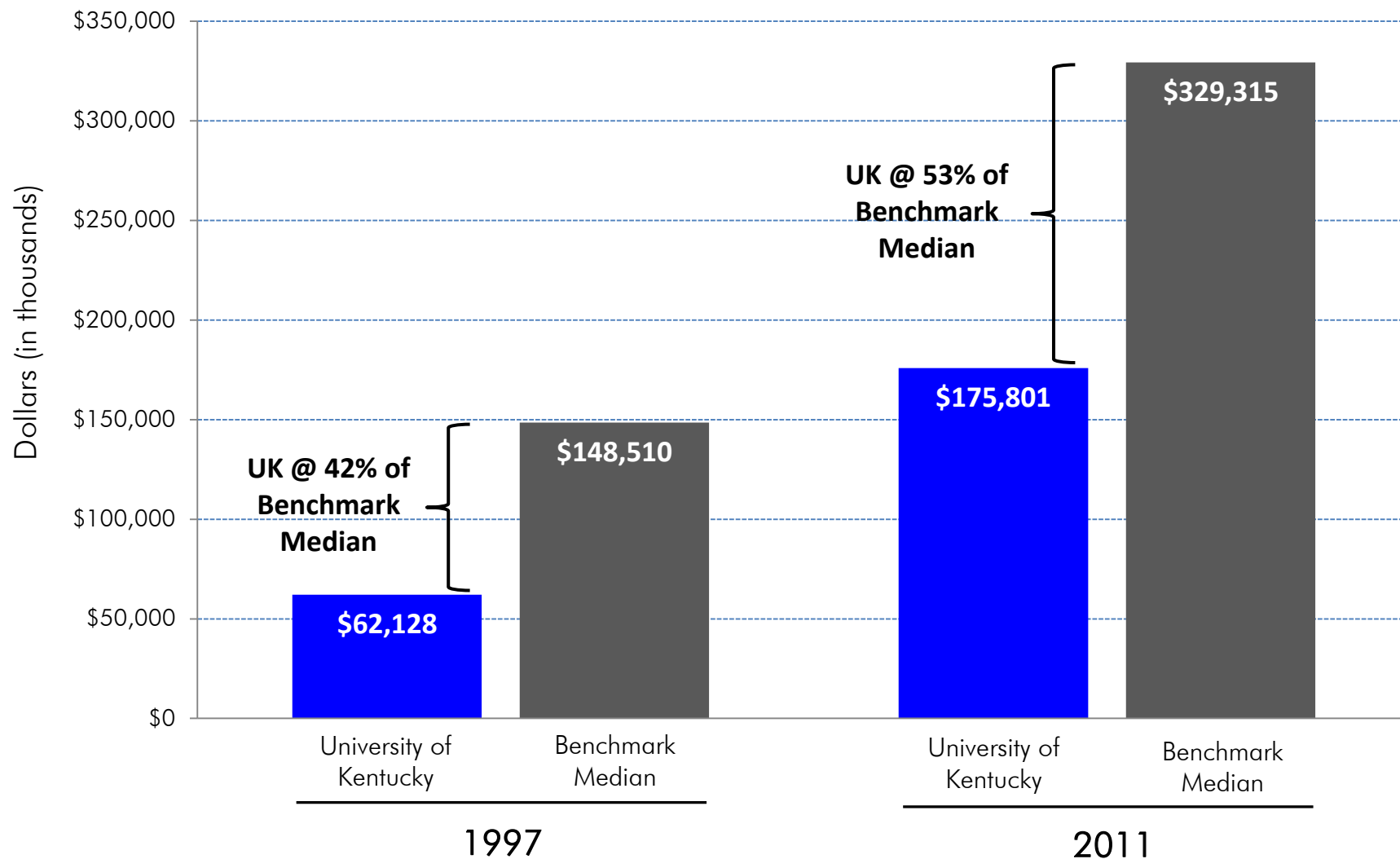
Externally-funded Research and Development (2008-2011)

(in millions of dollars)

■ UK ■ UofL ■ Comprehensives



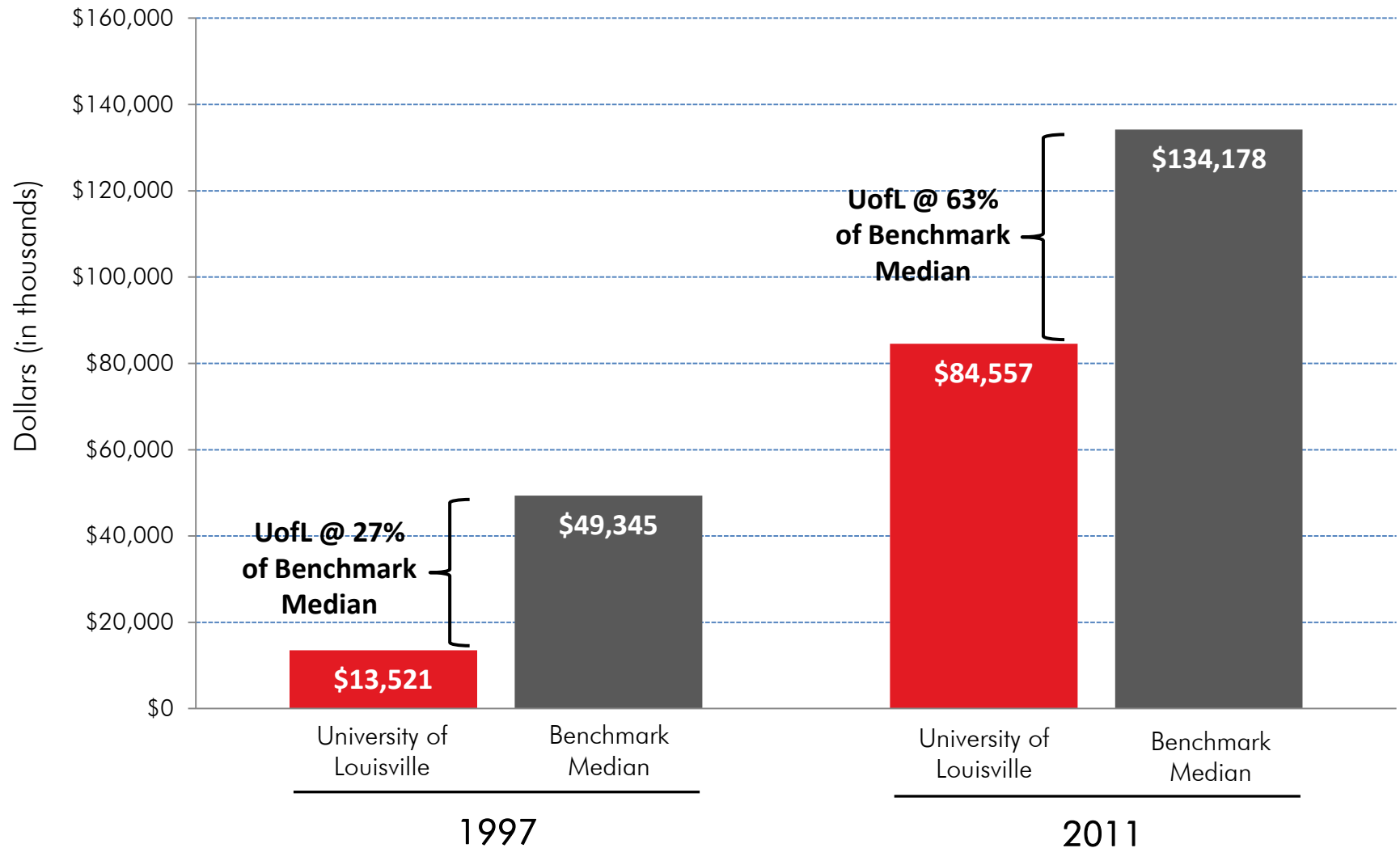
**University of Kentucky and CPE Benchmark Institution Median
Federally Financed Research and Development Expenditures for Science and Engineering
Fiscal Years 1997 and 2011**



Source: National Science Foundation (NSF), WebCASPARE Database System.

KENTUCKY COUNCIL ON POSTSECONDARY EDUCATION

**University of Louisville and CPE Benchmark Institution Median
Federally Financed Research and Development Expenditures for Science and Engineering
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Source: National Science Foundation (NSF), WebCASPARI Database System.

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What level of financial support?

Four Rounds of Funding

Fiscal Year	State Support	Private Match	Combined Total
1999	\$110 M	\$110 M	\$220 M
2001	\$120 M	\$120 M	\$240 M
2004	\$120 M	\$120 M	\$240 M
2009	\$60 M	\$60 M	\$120 M
Total	\$410 M	\$410 M	\$820 M

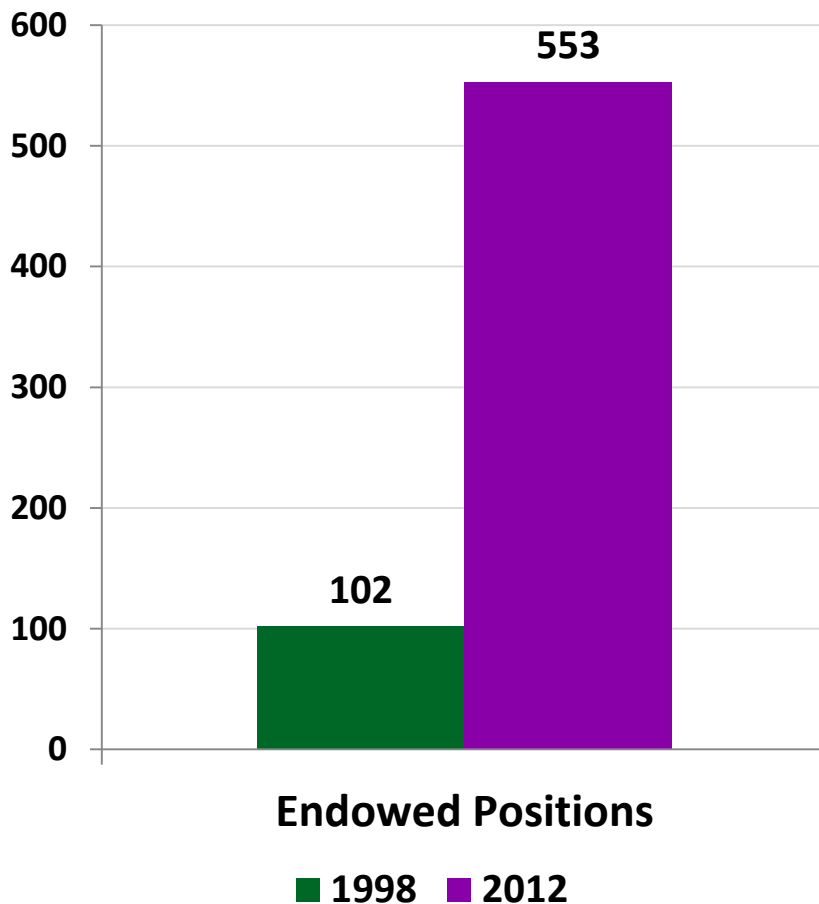
Note: Of \$410 M in total state appropriations for this program, UK and UofL received \$350 M. This table reflects figures for state and private funds when fully matched. As of June 30, 2013, there was \$875,000 in state funds remaining to be matched.



Rise in Endowed Positions

Kentucky Public Research Universities

Fiscal Years 1998-2012



Areas (Select List)

- | | |
|--------------------------|---------------------------|
| - Endocrinology | - Aging |
| - Ophthalmology | - Psychology |
| - Pharmaceutical Science | - Plant and Soil Sciences |
| - Chemical Engineering | - Cancer |
| - Hematology | - Electrical Engineering |
| - Pediatrics | - Biophysics |
| - Forestry | - Nursing |
| - Veterinary Science | - Cardiology |
| - Neurology | - Tobacco Research |



What outcomes have been achieved?

Fiscal Years 1998 – 2012 (UK & UofL Only)

- Over \$409 million in private gifts generated.
- Endowment values grew by \$1.06 billion or 198%.
- Externally funded R&D grew by \$246.2 million or 209%.
- Federally funded R&D grew from \$75.8 million to \$249.7 million, or by 229%.
- Endowed positions grew by 451 or 442%.



The To Do List: Solving the World's Great Problems

Government



University



Associations



Industry



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Building a More Innovative, Entrepreneurial Culture

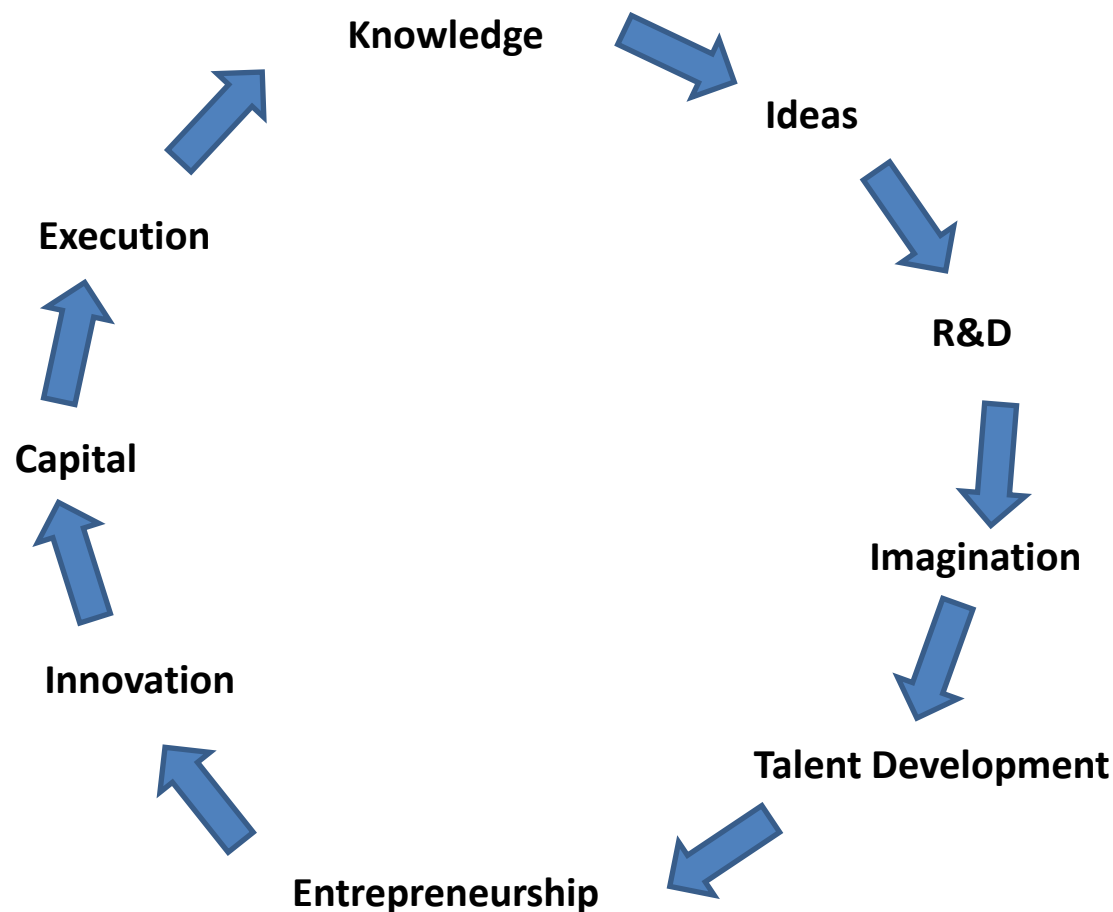
Kris Kimel

President

Kentucky Science and Technology Corporation



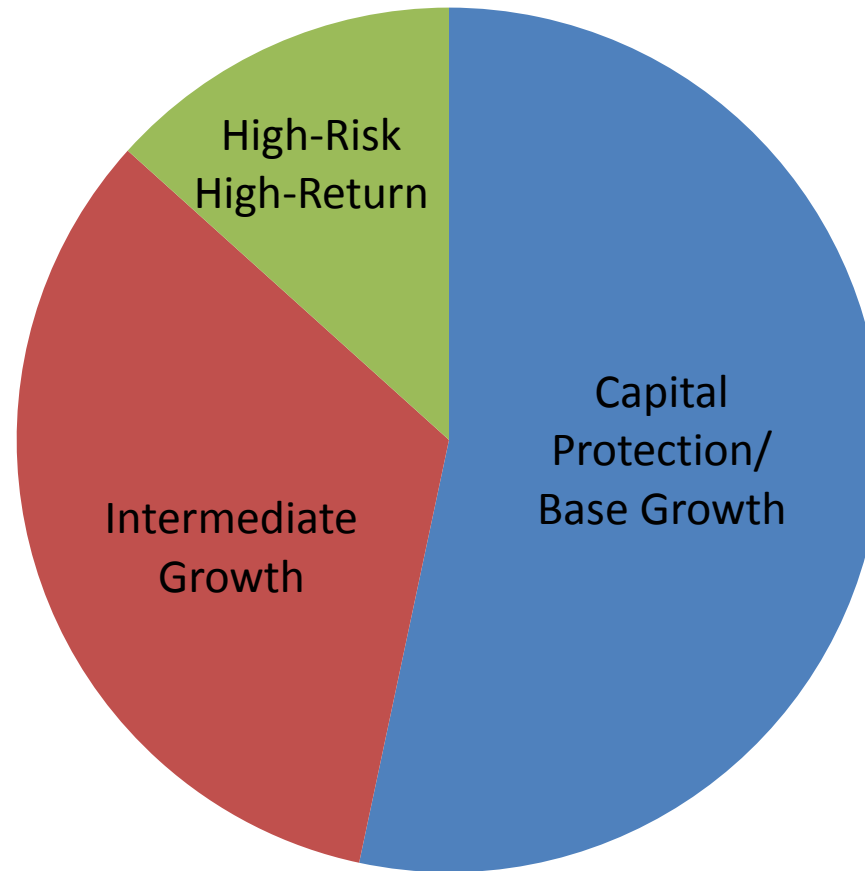
Entrepreneurial / Innovation



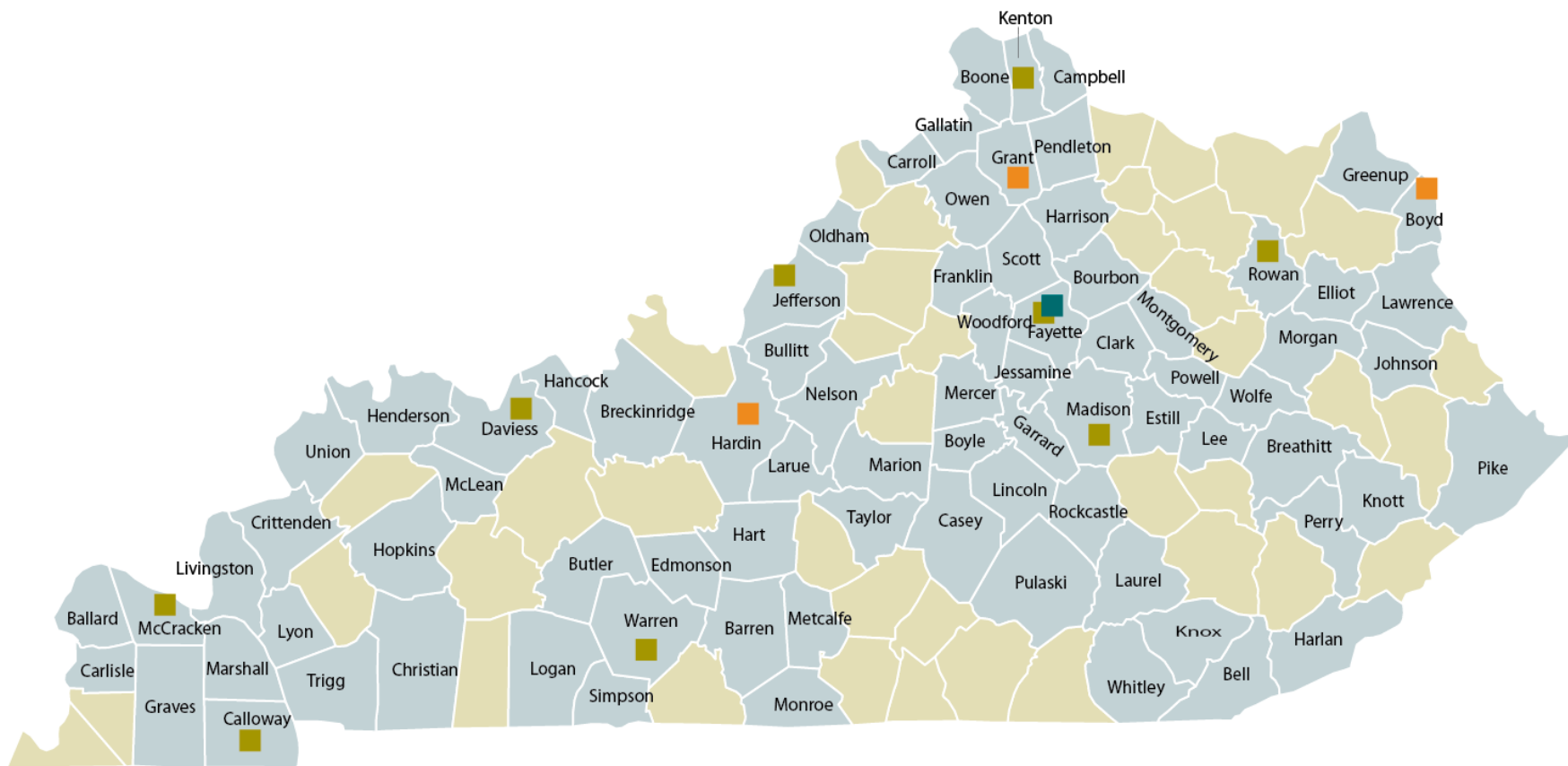
Eco-System



Economic Development / Growth Portfolio



Entrepreneurial Impact



Regional Office

Statewide ICC Headquarters

Satellite Office



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KSTC

KENTUCKY
SCIENCE & TECHNOLOGY
CORPORATION

One Program At-A-Glance

- KSEF R&D Excellence Awards
- KCF – Commercialization
- SBIR/STTR Phase Zero/Double Zero
- KY SBIR/STTR Matching

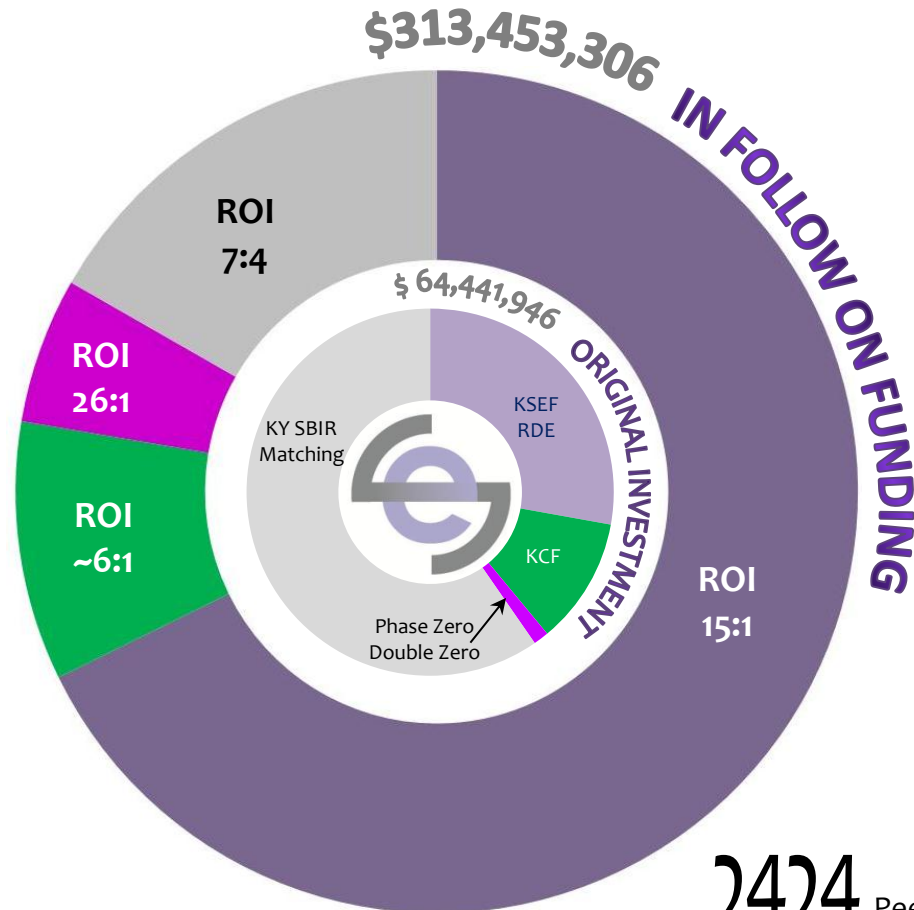
67 KSEF/KCF Awardees
Patented Technological
Innovations.

45 KSEF/KCF Awardees
Formed New businesses.

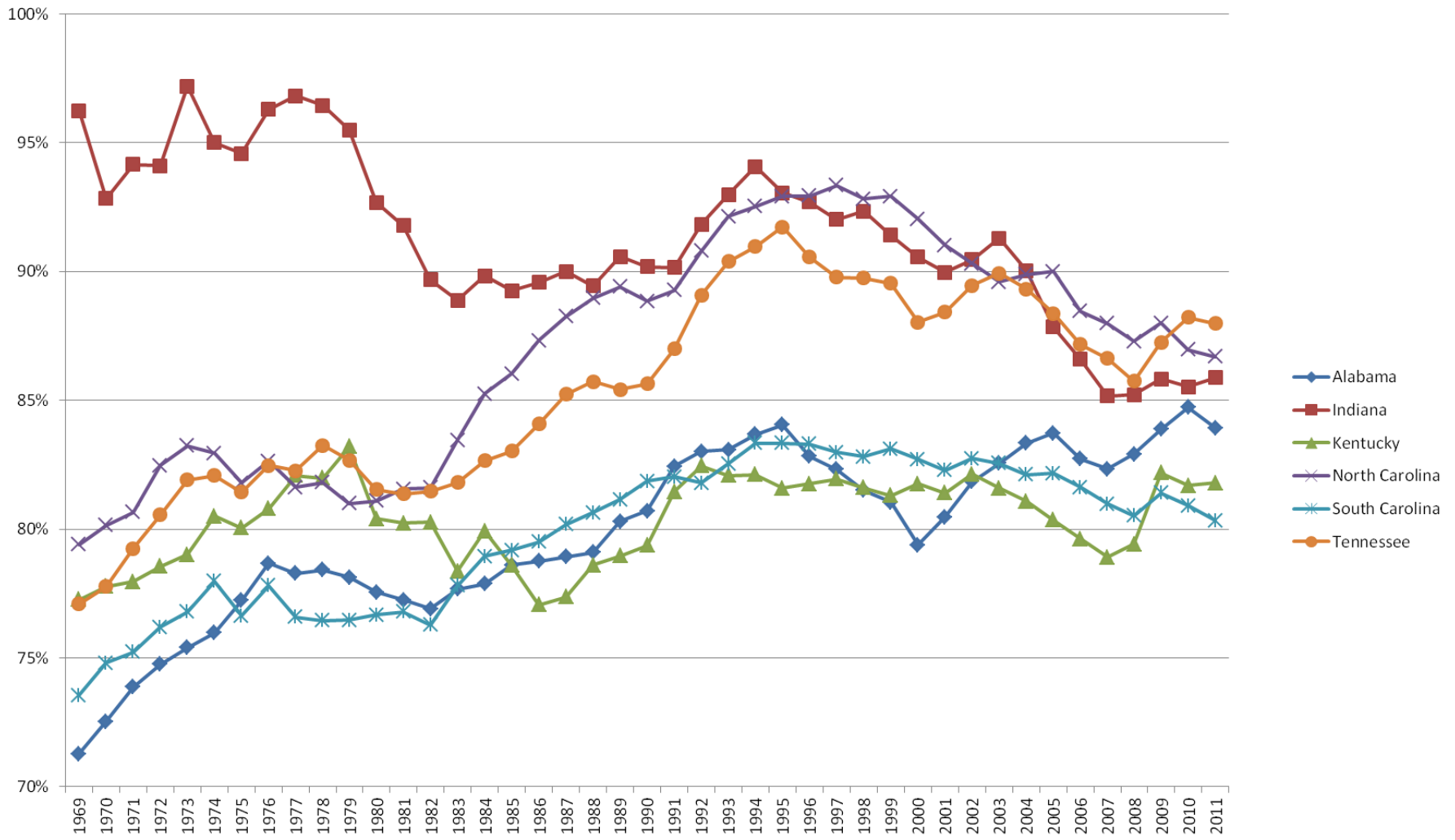
16 Young Investigator Awards
Received by KSEF Awardees,
15 NSF Career Awards, and
one DOD.

1650 Young Scientists and
Engineers Trained by
Awardees.

2424 Peer Reviewed
Manuscripts and Book
Chapters Published.

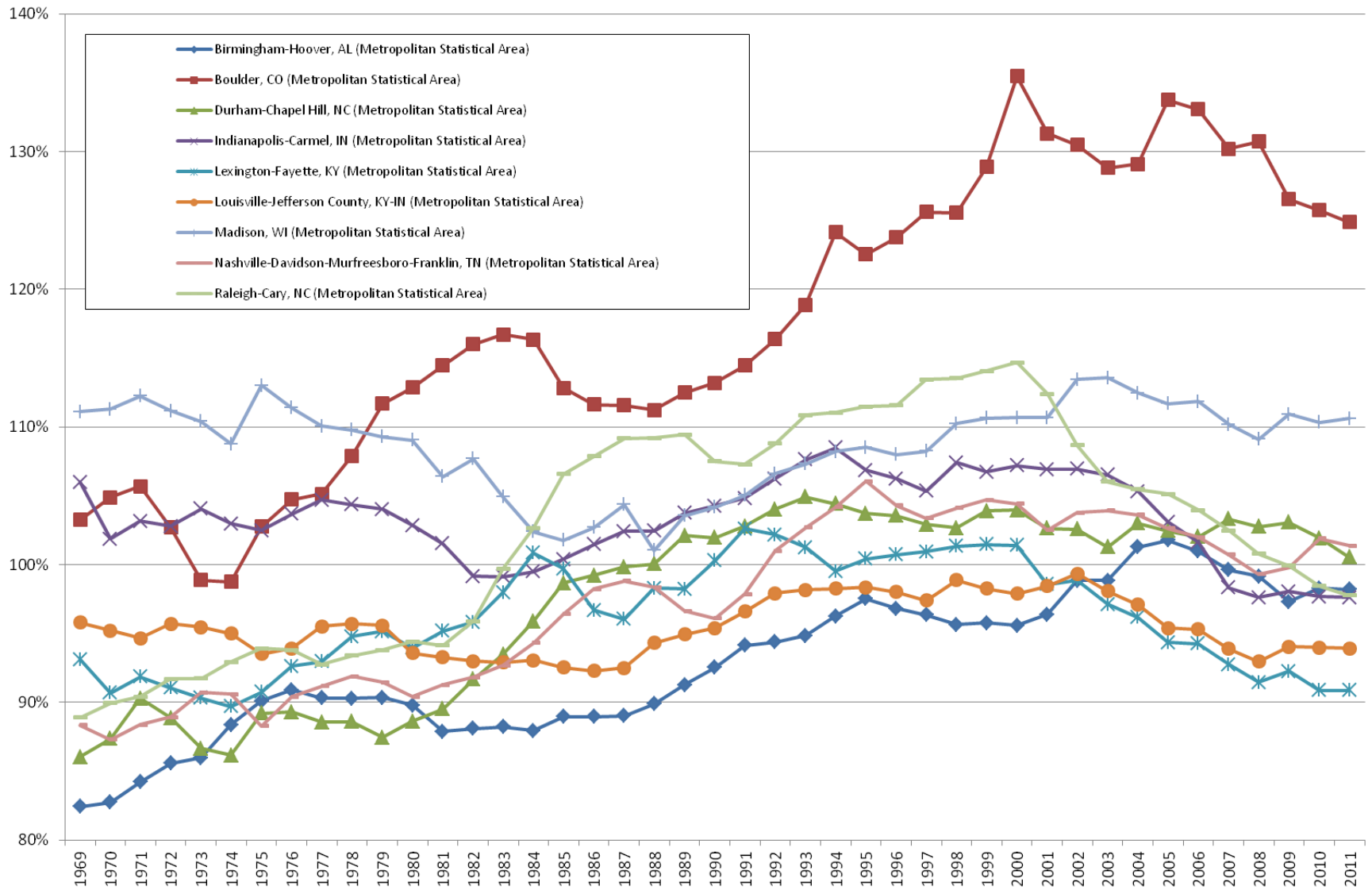


Per Capita Personal Income as a Percentage of the U.S. Average, 1969-2011, Kentucky and Selected States



Source: Center for Business and Economic Research, University of Kentucky, analysis of data from the U.S. Bureau of Economic Analysis.

Per Capita Personal Income as a Percentage of the U.S. Average, 1969-2011



Source: Center for Business and Economic Research, University of Kentucky, analysis of data from the U.S. Bureau of Economic Analysis.



The Good News

***Fast Company Magazine 2013 The United States of Innovation**

Where we are:

- 21st in Innovation
- 5th in Percent Growth in Entrepreneurial Activity
- 2nd in Percent Growth in Startups Per Million Residents





Research, Economic and Community Development

Policy Objective #7

Increase educational attainment and quality of life in Kentucky communities through regional stewardship, public service, and community outreach.

Strategy 7.1 - Strengthen and expand partnerships with business, industry, government, non-profit, and other educational entities to meet Kentucky's workforce and community needs.

Strategy 7.2 - Support collaborations among postsecondary education providers to serve regional needs and planning efforts to raise the educational attainment level of the Commonwealth.





Policy Objective 7: *Increase educational attainment and quality of life in Kentucky communities through regional stewardship, public service, and community outreach.*

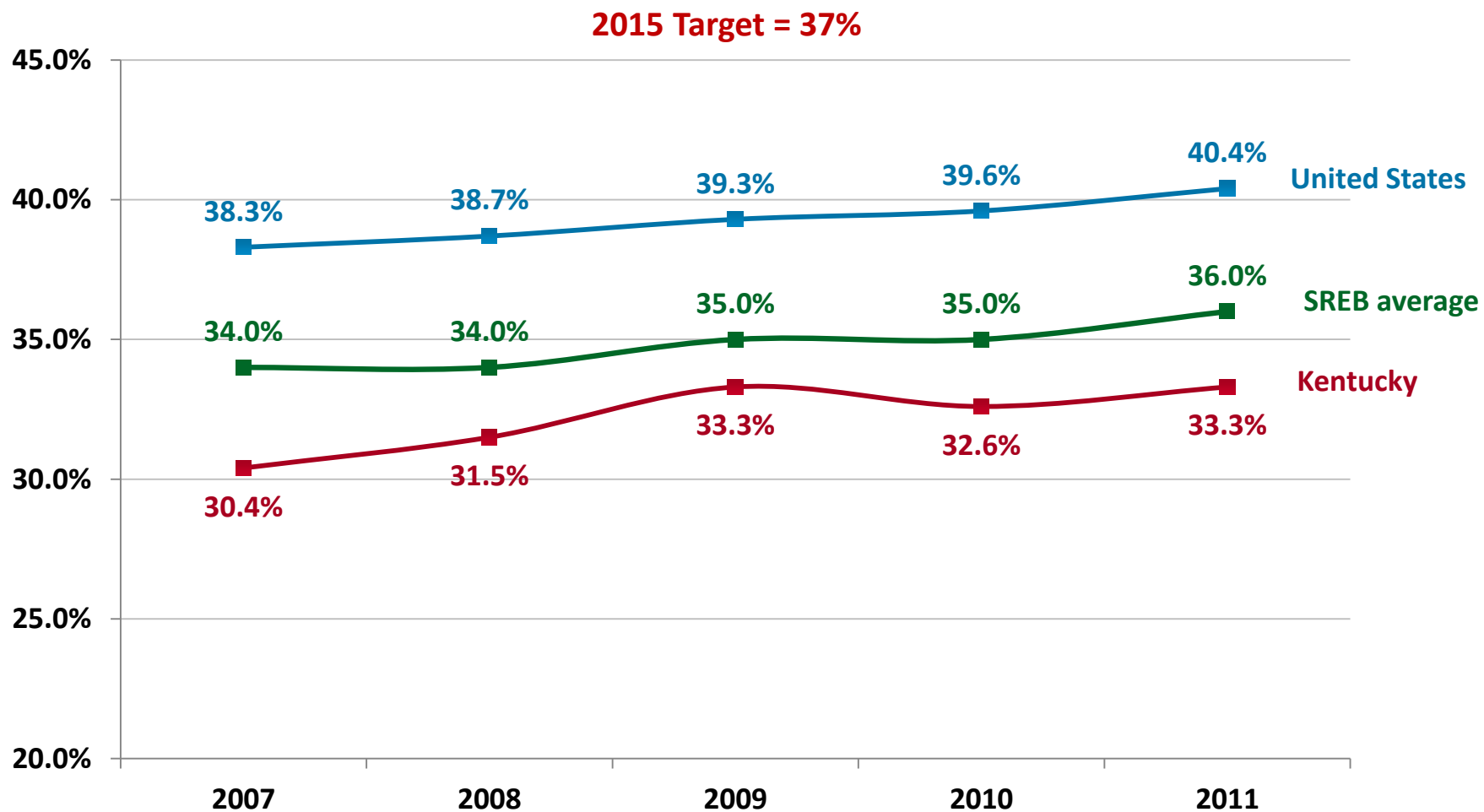
Performance Metric



**Educational Attainment at
the Associates Degree and
Higher**



Percentage of Adults (25 to 44) with an Associates Degree or Higher

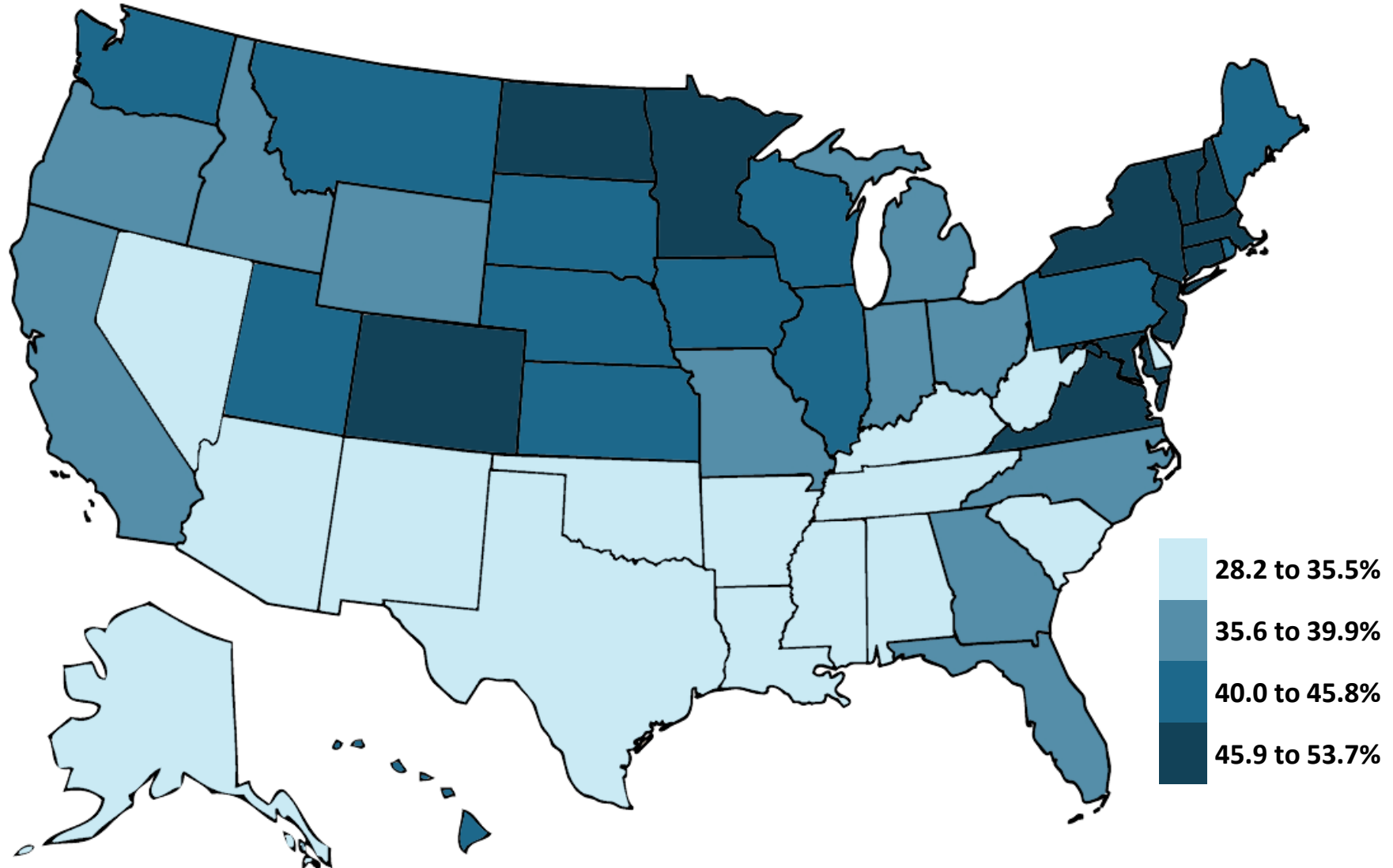


Source: American Community Survey



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Percentage of Adults (25 to 44) with an Associates Degree or Higher (2011)

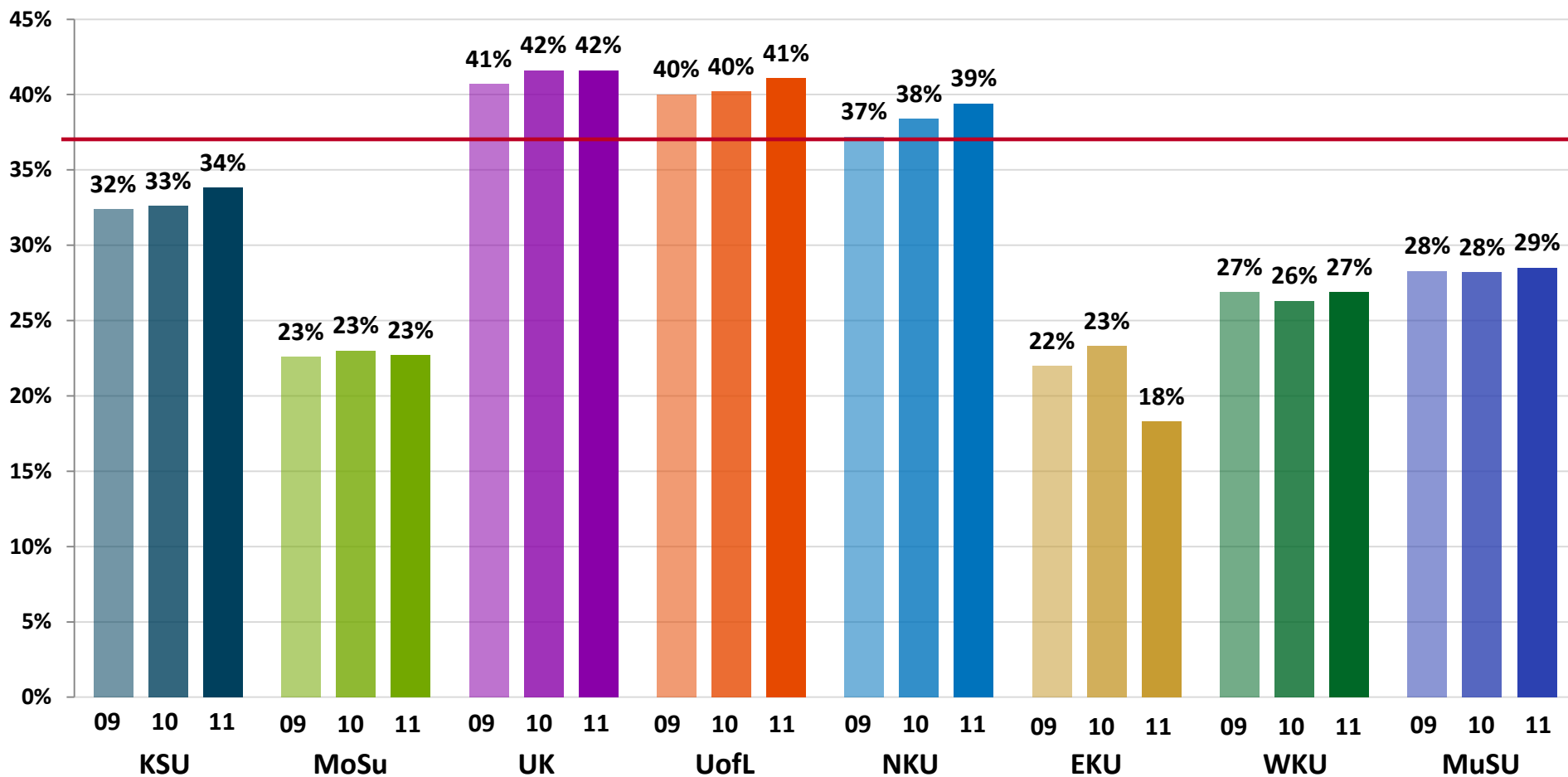


US Average = 40.4%

Source: American Community Survey.

Percentage of Adults (25 to 44) with an Associates Degree or Higher by University Geographic Area of Responsibility (2010-2011)

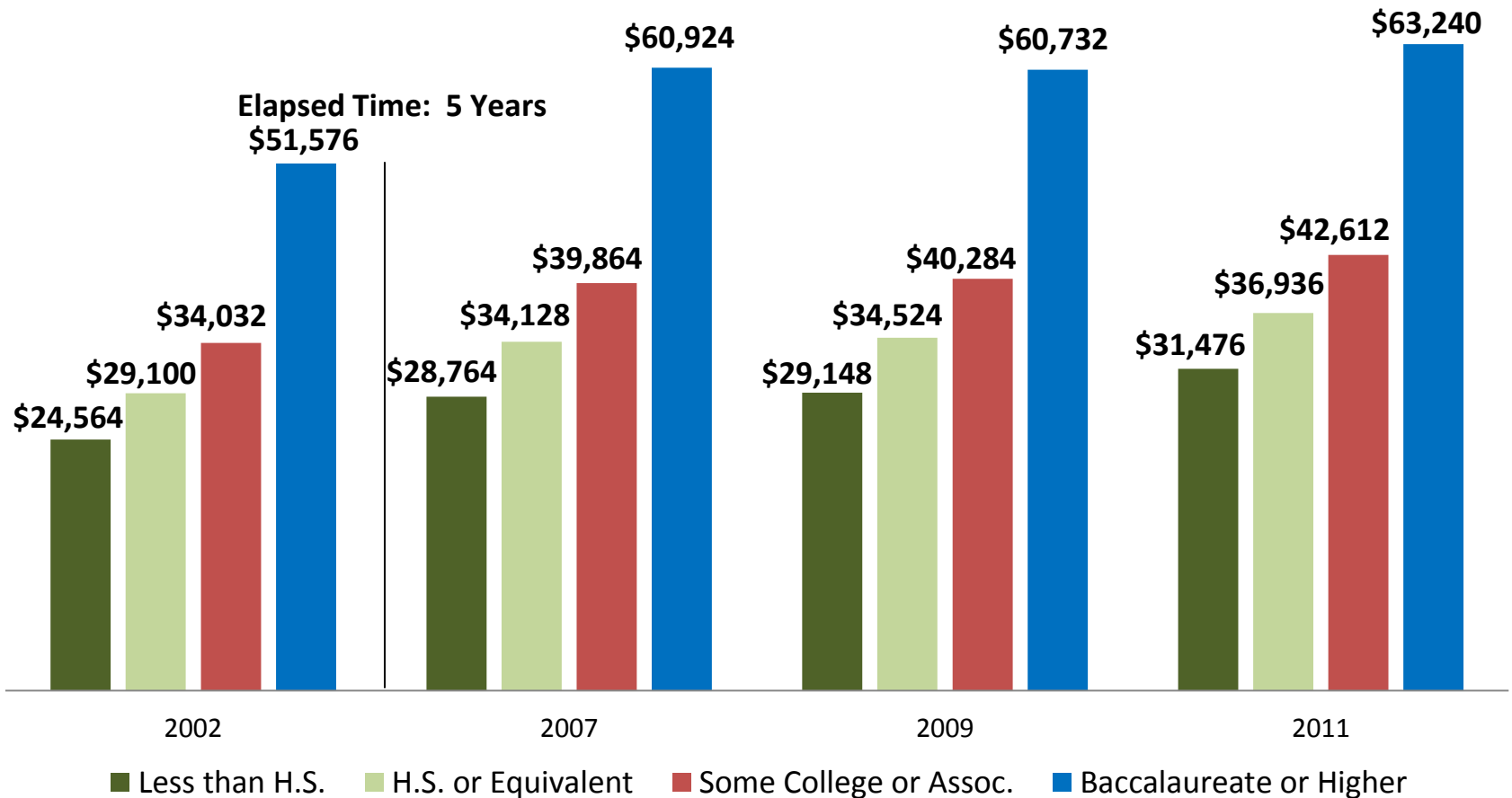
Overall Target for Kentucky = 37%



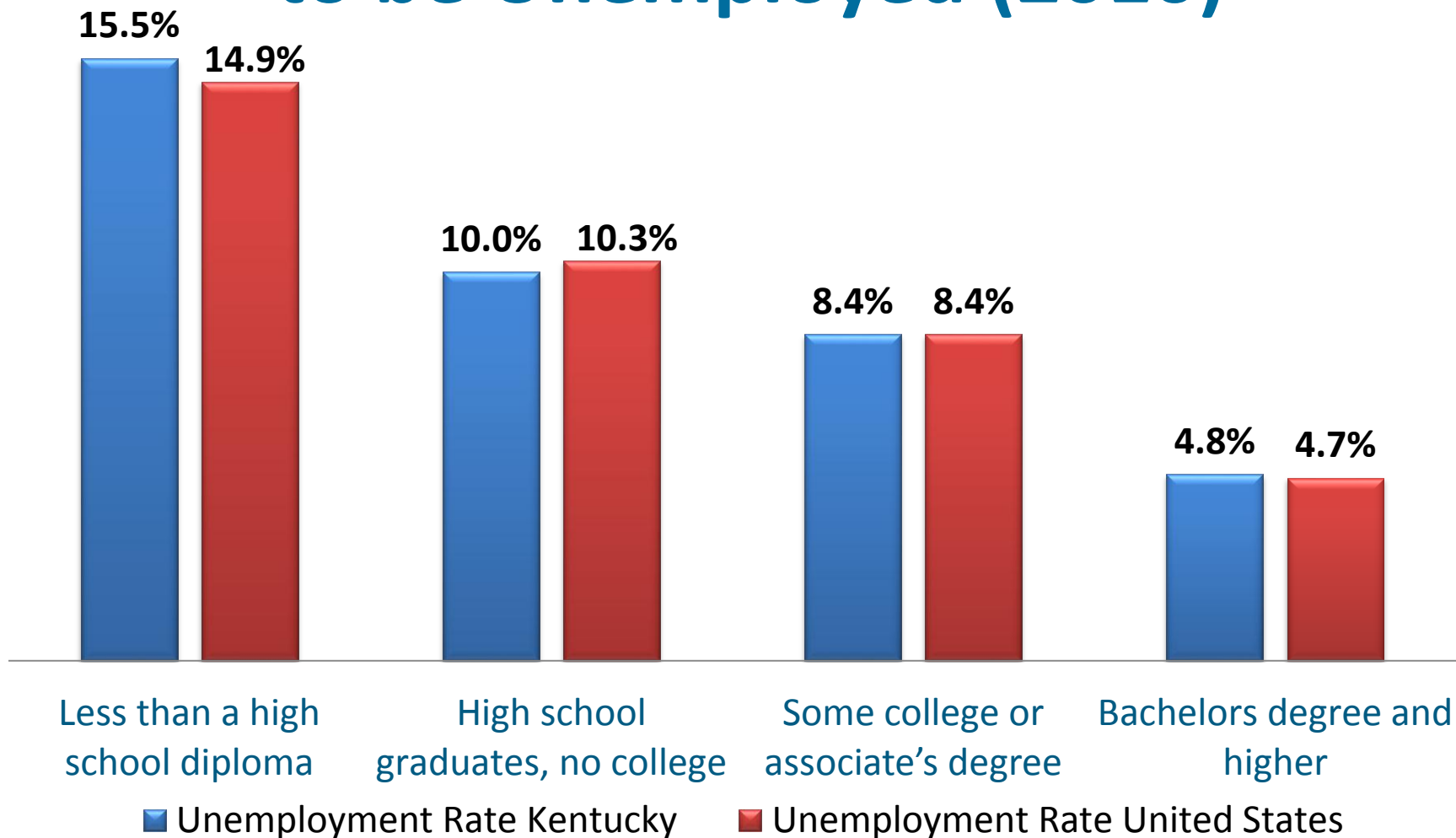
Why is this important?

***In Kentucky and the Nation,
Education Still Pays***

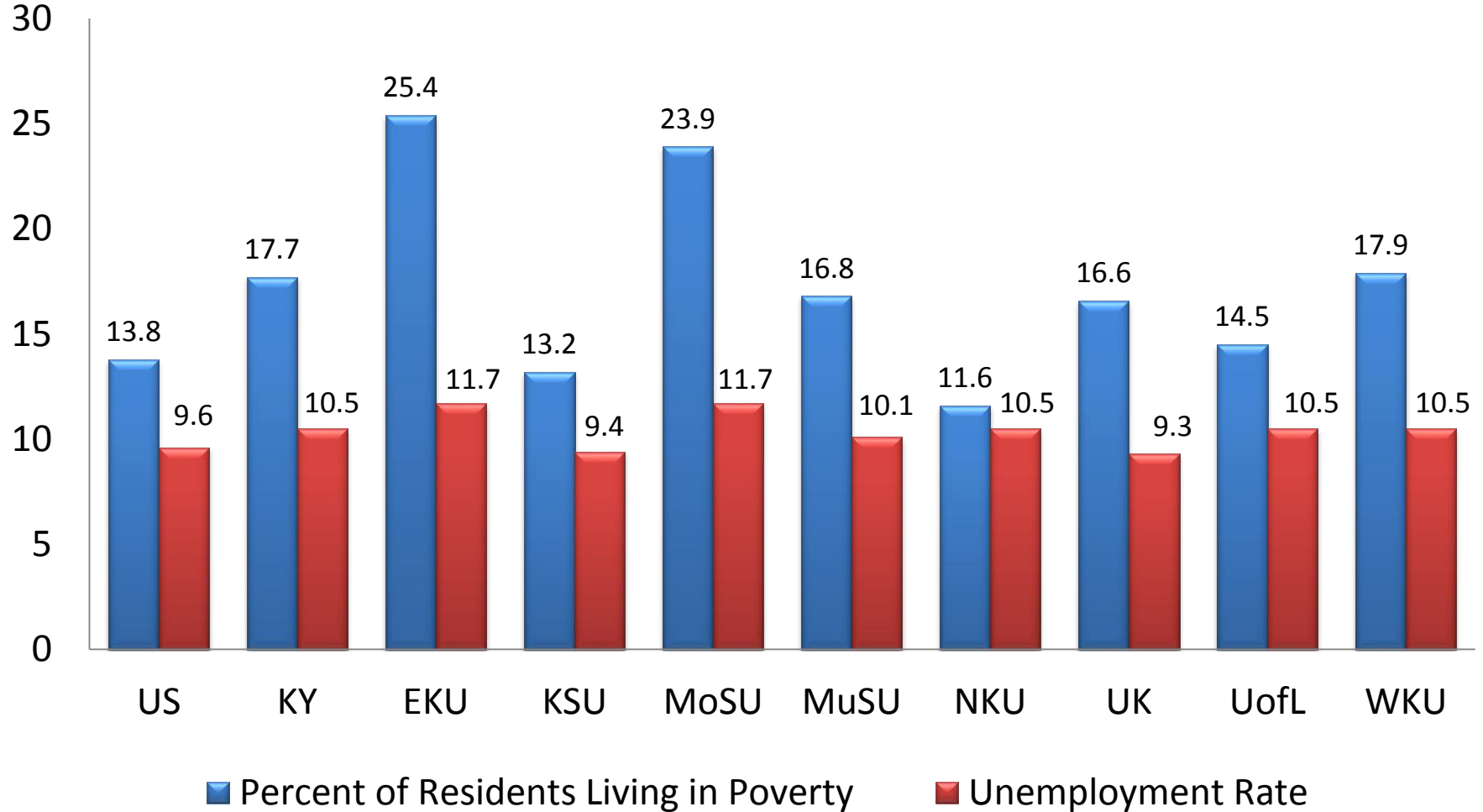
Average Earnings by Education Level in Kentucky



College Graduates are Much Less Likely to be Unemployed (2010)



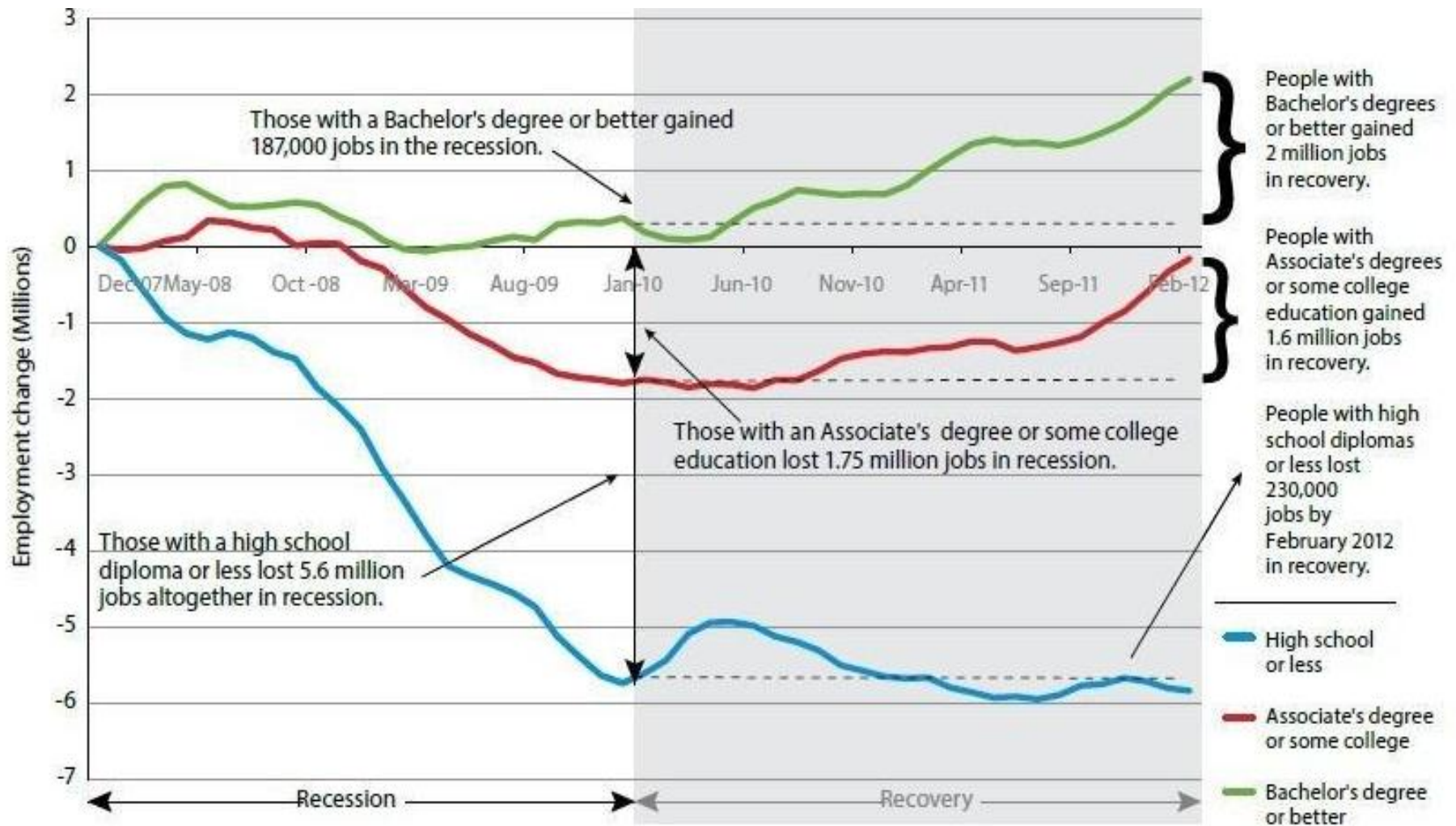
Poverty and Unemployment Rates by University Areas of Geographic Responsibility



Source, P-20 Data Collaborative, County Fact Book



Effects of Recession, by Education Level



The College Advantage: Weathering the Economic Storm, Georgetown University Center on Education and the Workforce



What Are We Doing?

- Policy focus on regional issues and challenges
- Increased attention to workforce needs and workforce/education alignment issues
- Emphasis on data research and analysis to drive policy decisions and communications
- Focus on entrepreneurial education and opportunity
- Continued efforts to reach out to non-traditional learners, underrepresented students, at-risk youth, and college drop-outs and stop-outs.



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